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AUTHOR Grundin, Hans U.
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ABSTRACT

This paper describes a research project which was designed to analyze the extent of functional literacy at different grade levels in Sweden. Functional literacy is defined here as the use of the mechanics of reading for different information purposes. A test battery was administered to 2600 students in grades six through twelve. The test battery was intended to represent a sample of important skills needed for functional literacy in a modern industrial society. The battery included comprehension tests of normal prose, tables, forms encountered in everyday life, difficult prose such as text from a home insurance policy, and a reading rate score. The tests were administered twice with an interval of one year between testing. Some results were an increase in reading comprehension from grade to grade at all levels, with the exception of the highest percentiles in grades eleven and twelve, and wide overlapping of scores between grades. Questionnaires were sent to 950 head teachers asking for their opinion of the value of the skills measured by the test battery and asking them to indicate a minimum score for satisfactory ability. Partial data results are discussed. A majority of the teachers who responded indicated that they felt the skills measured were important. (MKM)

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Hans U. Grundin
Teachers College of Linköping
Dept. of Educational Research
Storgatan 28
S-582 23 Linköping, SWEDEN

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EVALUATING COMPETENCE IN FUNCTIONAL READING: GRADES VI - XII

Paper to be presented at the Fifth World Congress on Reading, Vienna, 1974, at Symposium A - "The Printed Media and the Reader"

The term functional reading - and the closely related term functional literacy - is beginning to be used fairly often in discussions of reading problems. There does not seem to exist, however, any generally accepted definition of functional reading. Obviously, the term must be related to the identification of three major stages. These have been defined by Malmquist (1973) as

(1) the mechanics of reading;

(2) the ability to read functionally; and

(3) the ability to read critically and creatively, i.e. use the reading 'input' as a basis for reflection, problem-solving etc.

In accordance with this distinction functional reading may be tentatively defined as the use of the mechanics of reading for different information purposes. Functional literacy may then be defined as that competence in functional reading which nearly all individuals in a society will need in their adult life. The level of competence and the range of skills included in functional literacy will, of course, vary from society to society. In a static, rural society functional literacy may need to include nothing but

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the bare mechanics of reading, while the standard must be much higher in a rapid-developing, industrialized society. In the end, each society will have to determine what functional literacy should imply for its citizens.

Functional literacy in the future

As has been pointed out by Malmquist (1969) most countries will need to "raise their sights about functional literacy" in the near future. In recent years some people have tried to make us believe that reading is rapidly becoming an old-fashioned means of information retrieval due to the 'media revolution'. There is, however, little evidence to support such a hypothesis. On the contrary, several trends seem to contribute to the need for increasingly higher standards of functional literacy in most societies. Three of the most important of these trends are:

(1) The continuous increase in the production of reading materials in the form of books, newspapers, magazines, computer output etc.

(2) The growing need for education at the secondary and tertiary stages and for re-education and permanent education of adults.

(3) The efforts to engage a larger proportion of the adult population in the decision processes of the society and of its different organizations, which entail a marked growth in information needs.

If a society has the aim of helping all its citizens to reach a high level of functional literacy, systematic training of different reading skills must be pursued not only in the primary but also in the secondary school. This is - as has been pointed out before (Grundin, in press, & Malmquist, 1973) - not generally realized in Sweden, nor in other parts of Europe (Malmquist 1970). There is also reason to believe that many young students are ill equipped in terms of reading skills (Gardner, 1972).

A Swedish study of functional reading

The development of certain basic reading, writing and other communication skills throughout the primary and secondary schools has been

the object of a rather extensive reading research project in Sweden. This project has been described in a previous paper presented to the UKRA 1973 Annual Conference by the present author (Grundin, in press), so no detailed description will be given here.

This research project was designed so as to permit an analysis of the extent of functional literacy at different age levels. In grades 6 - 12 the same test battery was administered to samples of students at all grade levels. This battery included the following tests of reading skills:

(1) Comprehension of normal prose text measured by multiple choice test;

(2) Comprehension of normal prose text measured by cloze test;

(3) Comprehension of tables (test using authentic tables concerning housing allowances);

(4) Comprehension of forms encountered in everyday life (test using authentic bank, post & health insurance forms);

(5) Comprehension of difficult prose text (test using authentic home insurance policy text); and

(6) Rate of reading normal prose text.

In all about 2,600 students were tested in this project. The tests were administered twice with an interval of one year between test occasions, so as to permit an evaluation of the increase in reading skills at different grade levels.

The reading tests included in this study do, of course, not pretend to cover the full range of skills needed for functional literacy in a modern industrial or 'post-industrial' society. They are only intended to represent a sample of important skills, which will give a good indication of the competence in functional reading reached by different groups of students. The number of tests and the length of each test are the result of a compromise between the desire to cover several important areas of reading skill with sufficiently reliable tests and the need to restrict the total testing time to what was considered feasible for large scale testing within the school subject Swedish Language & Literature. The total testing time for the combined reading and writing test battery, including 11 different tests, was 80 minutes.

Some test results from the study of functional reading competence

An example of the reading test results obtained at the first test occasion in the research project discussed here is presented in figure 1. The figure shows the relationship between grade level (horizontal axis) and results on the multiple choice reading comprehension test expressed as percentage of maximum score (vertical axis). The figure contains five percentile values (P_{90}, P_{70}, P_{50}, P_{30} and P_{10}) for each of the seven grades (6 - 12). Each series of P-values for different grades form a percentile curve, which illustrates the development from grade to grade at that particular ability level. The 10th percentile curve (P_{10}), for instance, indicates the development of poor readers from grade 6 to grade 12. In figure 1 the median for grade 6 and grade 9 respectively has been marked by broken horizontal lines. These lines will make it easier to see what proportion of the students in, say, grade 10 falls below the grade 6 median.

/fig. 1 in about here/

The figure shows an increase in reading comprehension from grade to grade at all percentile levels, with the exception of the highest percentiles in grades 11 and 12. This apparent stagnation in the development of the good readers may partly be due to a ceiling effect (a considerable number of students reach the maximum score). But it may also be due to lack of motivation among some of the oldest students. The different percentile curves are roughly parallel, at least up to grade 11. This means that the rate of reading skill development from grade to grade is about the same for the poor readers (P_{10}) as for the normal (P_{50}) and good readers (P_{90}).

For a correct interpretation of the data on reading skill development presented here it is necessary to take into account the degree of retentivity of the secondary school in Sweden. In comparison to many other countries Sweden has a low degree of retentivity. Up to grade 9 an age group is kept practically intact in a compulsory comprehensive school (the exceptions are those in special schools, in institutions for mentally retarded etc.). And the upper secondary school (grades 10 - 12) recruits 95 - 90 per cent of the age group in grades 10 and 11 and some 45 per cent in grade 12. The superiority of grades 10 - 12 compared to grade 9 may therefore be due, at least partly, to the

fact that a number of poor readers have left school. This may, in its turn, imply that the poor readers (at or below the P_{10} level) do not really improve their readnng abilities after grade 9.

Differences between classes in reading competence

An interesting aspect of differences within grades is the differences between classes at the same grade level. This is illustrated in figure 2, which gives the class means at all grade levels for the multiple choice reading comprehension test. In this figure too the degree of overlapping between grades is striking. The average performance in the best grade 6 class is higher than that of the weaker classes in grades 10 and 11. In grades 10 and 11 the differences between classes at the same grade level may be due to streaming of students: there are theoretical, semi-theoretical and vocational courses in these grades. (Grade 12 is not streamed, since only those in theoretical courses stay in the upper secondary school after grade 11.) In grades 6 - 9, however, there is no streaming. Except for the special classes all classes are undifferentiated classes recruiting their students from a particular residential area.

/fig. 2 in about here/

It is not possible, at this stage, to tell to what extent differences between classes depend on differences in the student populations of different residential areas or on differences in the quality of instruction given in different classes. It is quite clear, though, that these differences between classes have important implications for the evaluation of reading competence.

At the classroom level the most important implication seems to be that the individual teacher cannot evaluate reading competence unless he can refer his own observations or test results to some kind of national, regional or at least local standard. Also, if the object of the evaluation is to determine whether the reading performance of a class of students is matching its potential reading ability, the teacher must relate data on reading performance to data regarding the students' capacity in terms of verbal intelligence etc. If this is

neglected, a teacher may feel satisfied with a class performing in accordance with a regional or local norm, although the class should, if its potential was fully exploited, be a good deal above the average.

An attempt to determine a minimal satisfactory level of reading competence

Empirical studies of reading performance at different grade levels can never tell us whether the observed performances are satisfactory or acceptable or 'good'. Such questions call for some kind of value judgment. Of course, value judgments are implied already in terms such as 'poor readers' and 'good readers', which have been used above. But these terms express mainly some kind of relative value judgment - at least as they have been used by the present author. 'Poor reader' means simply 'poorer than the average reader'. When we ask, if the reading ability or performance of a person is satisfactory, we want to know something quite different. We want a value judgment that is, if not absolute, so at least related to some kind of external norm - other than a group average.

One of the greatest problems with norm-referenced or criterion-referenced value judgments lies in the determination of the criterion. If we talk about satisfactory reading skill, we must decide for what purpose or to whom it should be satisfactory. And the judgment will be generally accepted only insofar as the criterion is recognized as valid. In Sweden - as in most countries - there is no generally accepted criterion of what is satisfactory reading ability in an adult citizen. To define such a criterion on the basis of an empirical study of the adult citizens' needs and interests seems possible, but such a study would be an extremely expensive and time-consuming project.

In the absence of an external, empirical basis for selecting a judgment criterion, there remains the possibility of soliciting the opinion of informed individuals. We tried to do this by mailing a questionnaire to some 950 head teachers, as we call them, of Swedish in the upper stage of the comprehensive school and in the upper secondary school. The questions put to these head teachers

were related to the tests employed in the project. The teachers were asked, for each test:

(1) How many items in test X should, in your opinion, a student of average intelligence leaving the comprehensive school (or the upper secondary school) at least answer correctly before you consider his ability satisfactory?

(2) Of how great importance is it, in your opinion, that students leaving the comprehensive school (or the upper secondary school) has the skill or the skills measured by test X?

More than 700 head teachers returned our questionnaire. This means that we got replies from more than 70 per cent of the total population of head teachers in the subject Swedish in the comprehensive and upper secondary schools. These replies contain a very great amount of informations concerning the opinions of a group of fairly experienced teachers. To date only the more readily quantifiable part of this information has been analyzed. As an example of the results obtained we give, in tables 1 - 3, some of the data concerning the multiple choice reading comprehension test.

/tables 1 - 3 in about here/

Table 1 shows very clearly the great variation in the teachers' opinion regarding what should be considered the 'minimal satisfactory level' of reading ability. While some teachers believe that a score of 6 is satisfactory in a student leaving a three-year upper secondary course (USS III), others believe that already the average student leaving the comprehensive school in grade 9 should reach a score of 12. Table 2 shows, also very clearly, that a large majority of the head teachers find the kind of reading comprehension measured by this test very important. Only one teacher believes that it is of little importance. Table 3, finally, presents a comparison between the mean values of the estimated minimal satisfactory levels of ability for different student categories on the one hand, and the observed test score means for those student categories on the other.

The most conspicuous thing about table 3 is the high degree of similarity between the two series of mean values. In spite of the great variability in the teachers' opinion the average minimal satisfactory level of performance is quite close to the actual performance level of the students tested in the project. This would, if interpreted literally, mean that about 50 per cent of the students do not reach the minimal satisfactory level of performance defined by the teachers.

The results presented in table 3 plus the gist of numerous commentaries to questionnaire replies have led us to believe, however, that a great part - perhaps a majority - of the respondees have primarily tried to make as informed guesses as possible concerning what results their students would reach, if they were given the test. If so, they have not really tried to make a norm-referenced value judgment. One may even argue that they have not made any value judgment at all. One obvious implication of this is that the correspondence between required and observed means in table 3 reflects the ability of the teachers to make informed guesses about the reading skills of average students. The attempt to determine a minimal satisfactory level of reading competence by means of a teacher questionnaire has, consequently, not been very successful.

It must be emphasized, though, that the questionnaire presented here has been extremely valuable and informative, in spite of the fact that it has been of rather small help in determining a minimal satisfactory level of reading competence.

Summary and future perspectives

The research project presented in this paper originally grew out of research work in the field of primary reading and the consequent question: What happens to reading abilities later in school? This interest was then coupled with an interest in the whole issue of functional reading and functional literacy. The data gathered in the study will permit us to answer, at least tentatively, questions such as:

To what extent has functional literacy (defined as a kind of minimal competence in functional reading) been reached at different grade levels in the comprehensive school and in different courses within the upper secondary school?

The project also includes an attempt to arrive at a generally agreed operational definition of a minimal satisfactory level of reading ability for different student categories, i.e. essentially a definition of functional literacy. This attempt was not quite successful, since it seemed to indicate that many - perhaps most - teachers can hardly be persuaded to make value judgments with reference to a personal, subjective norm and express them in terms of 'hard' data such as scores on a given test. Instead of stating what reading skill level a given group of students should, in their personal opinion, reach, the teachers tend to make guesses about what skill level the students actually reach. Either the question of what is satisfactory is not touched or one must assume that their philosophy is: What is, is satisfactory!

Future progress in this field must apparently be sought in other directions. The empirical study of the actual skills of students of different categories must certainly be pursued. Such descriptive work is vital to our understanding of the development of reading skills. But we must also constantly remember that description is not evaluation. To evaluate is to make value judgments on the basis of a combination of carefully defined criteria and objective empirical description of that part of reality which is to be evaluated. Consequently, we need, as a complement to descriptive studies of reading skills, definitions of criteria or norms to which our observed data could be referenced.

The definition of such criteria or norms must always imply subjective opinion to some extent. In the end a concept such as functional literacy in a given country may have to be decided by means of a compromise between different opinions (perhaps opinions of different interest groups). Recognizing this we should not, however, go to the extreme of believing - or pretending to believe - that one opinion is

as good as another. Opinions can be more or less informed, more or less rational, more or less biased etc. It should be the task of reading research to present the facts on which such an opinion should be founded, to analyze different opinions in terms of their consistency, clarity etc., to criticize the opinions and to make suggestions as to how they could be improved.

Unfortunately, the limits of space and time do not permit a more specific discussion of how to arrive at good criteria of functional literacy. I can only repeat that it must be done by means of gathering information about the opinions in the matter held by different groups and of analyzing, criticizing and synthesizing these opinions.

REFERENCES:

GARDNER, J. (1972), The student reader. A. Melnik & J. Merritt (Eds.), Reading: Today and Tomorrow. London: University of London Press Ltd. Pp. 365-69.

GRUNDIN, H.U. (in press), The development of reading, writing and other communication skills during the comprehensive and upper secondary school years: Presentation of a Swedish research project. Paper presented at the 1973 U.K.R.A. Conference at Totley-Thornbridge College of Education, England.

MALMQUIST, E. (1969), 'Reading: A human right and a human problem'. R.C. Staiger & O. Andresen (Eds.), Proceedings of the Second World Congress on Reading. Linköping: IRA. Pp. 1-8.

MALMQUIST, E. (1970), 'A decade of reading research in Europe, 1959-1969'. The Journal of Educational Research 63, 309-29.

MALMQUIST, E. (1973), Läsundervisning i grundskolan /Reading instruction in the comprehensive school/. Lund: CWK Gleerup.

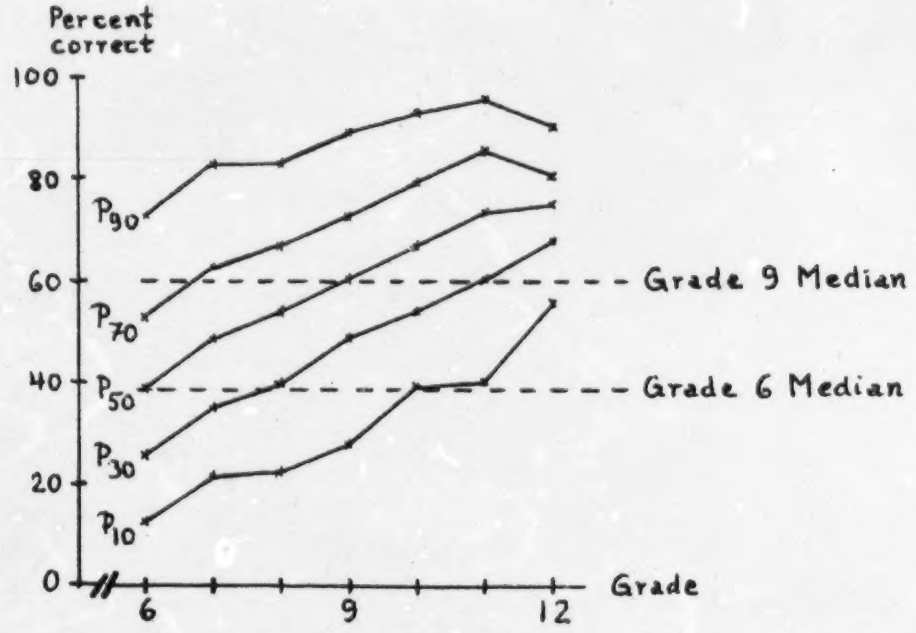

Figure 1 Normal prose reading: Multiple choice comprehension test. Percentile curves for P_{90}, P_{70}, P_{50}, P_{30}, and P_{10}.

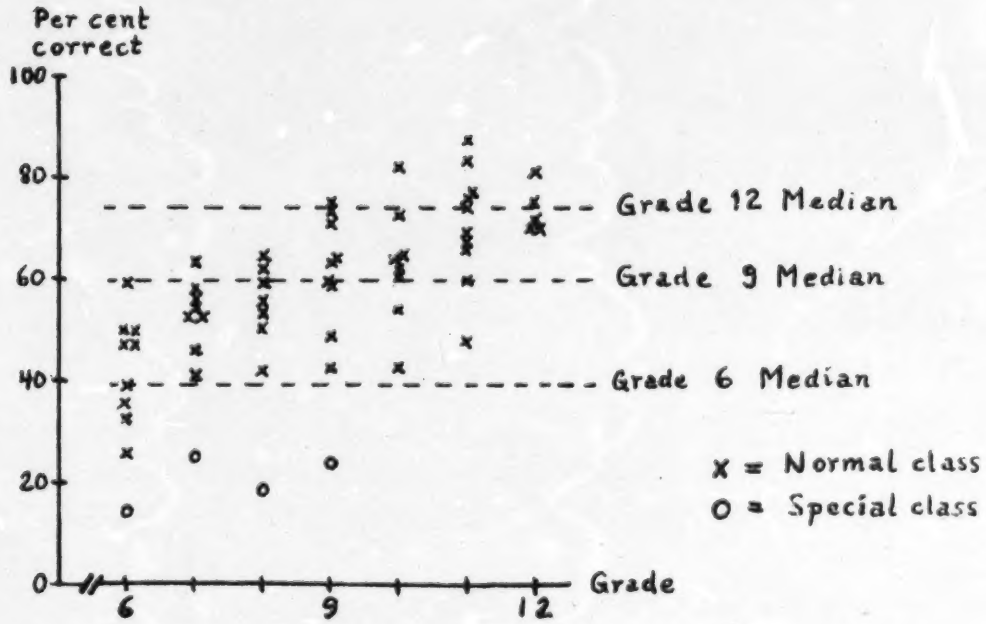

Figure 2 Normal prose reading: Multiple choice comprehension test. Class means at each grade level.

Table 1 Teacher estimates of minimal satisfactory score in reading comprehension for average students leaving certain school forms. (The table gives response frequencies in per cent of total number of responses.)

School form	Final grade	Minimal satisfactory score 4-5	6-7	8-9	10-11	12-13	14-15	Total
Compreh.	9	1	8	45	38	8	0	100
USS I	11	8	37	40	13	2	0	100
USS II	11	1	5	35	51	8	0	100
USS III	12	0	3	2	32	43	20	100

Note: USS I = Upper secondary school: two-year vocational course with one year of Swedish;
USS II = Ditto: two-year semi-theoretical course with two years of Swedish;
USS III = Ditto: three-year theoretical course with three years of Swedish.

Table 2 Importance attached by head teachers to reading comprehension skill tested by conventional multiple choice test. (The table gives response frequencies in per cent of total number of respondees.)

School form	Final grade	Degree of importance Very great	Great	Some	Small	No	Total
Compreh.	9	45	47	7	1	0	100
USS I	11	28	42	31	0	0	100
USS II	11	44	43	13	0	0	100
USS III	12	63	28	9	0	0	100

Note: See note to table 1.

Table 3 Comparison between teacher estimates of minimal satisfactory scores and observed student scores on multiple choice reading comprehension test.

School form	Final grade	Average min. satisfactory score	Average observed score	Difference *)
Compreh.	9	8.9	9.4	+ 6
USS I	11	7.3	7.4	+ 1
USS II	11	9.3	9.7	+ 4
USS III	12	11.5	10.9	- 5

*) Observed score - minimal satisfactory score, expressed as percentage of minimal satisfactory score.

Note: See note to table 1.